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ICE SHEET STUDIES USING SYNTHETIC APERTURE RADAR

by

R. Bindschadler (671)

The objective of this research is to demonstrate the utility of synthetic aperture radar in ice sheet studies. The major advantage of SAR imagery over visible imagery is the all-weather capability of radar and the ability to specify look angle. Available digital SAR imagery over ice sheets has been collected and examined both qualitatively and quantitatively using corroborative data, such as Landsat imagery, to confirm feature identification and interpretations. A simple scattering model will be developed to assess the relative importance of surface topography, composition, and subsurface layering to the intensity of radar backscatter. Recommendations of system parameters will be made for optimal SAR operation over ice sheets.

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